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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/362,022	07/27/1999	ROBERT J. MEYER	D/96602Q1	6313

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EXAMINER

VIDA, MELANIE M

ART UNIT	PAPER NUMBER
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2697

DATE MAILED: 03/31/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/362,022

Applicant(s)

MEYER ET AL.

Examiner

Melanie M Vida

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 7/27/99 has been considered by the examiner and is attached to this office action.

Drawings

2. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (page 7, line 33 through page 8, line 4). See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. **Claims 1-3, 9, 13, 14** are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-3, 16, 19, and 20, respectively, of copending Application No. 09/362,021. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claim 1** in both applications refers to an original image, which reads on both the "improved print image", and an "improved

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“halftone cell comprises a plurality of original pixels”, which is similar to the “original image of original pixels”. Further, both has auxiliary pixels, where the “first auxiliary pixel is in replacement of an original pixel of said original pixels for enhancing the printing of the original image”. Referring to **claims 2, 3** the application and the copending application claim the same subject matter that the “first auxiliary pixel is a black auxiliary pixel”, and “the first auxiliary pixel is a white auxiliary pixel”, respectively. Referring to **claim 9**, the application and the copending application in claim 16, refer to the same method for improving the printing of an image, i.e. “receiving a source image comprising original pixel data”, and “processing the source image original pixel data”. Further, the reference in claim 9 of the copending application refers to a “halftone cell including embedded pixels” which is substantially similar to this application in that the method also “embeds auxiliary pixels”. Referring to **claim 13**, the application and the copending application in claim 19 refers to the same digital imaging system for “receiving a document image in a form suitable for processing”, and “processing the document image in an image processing system to embed auxiliary pixels in order to enhance the image. Finally, **claim 14**, is substantially similar to the copending application claim 20, in that the digital imaging system has the same digital front end. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1, 2, 3, 9, 13, and 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Mailloux, U.S. Patent Number 5,555,557 (hereinafter, Mailloux).

Mailloux teaches with regards to **claim 1**, a method to convert bit-map images, *read as original font (i.e. images) of original pixels*, at a first resolution and optimized for a particular printer technology, *read as an improved font (i.e. font=image per the Admission, page 6, lines 8-12)* (col. 3, lines 8-14). Mailloux further teaches that the resolution conversion of the image, *read as an improved font image*, is implemented on a pixel-by-pixel basis, based on the original image pixels, A, B, C, D, E, F, G, H, I, *read as a halftone cell including a plurality of original pixels*. Magnified pixels, Z_1, Z_2, Z_3, Z_4 are determined based on the white or black color of the parent pixel, E, *where the magnified pixels are read as the auxiliary pixels replacing one of original pixels to improve the printing of the halftone cell*. Mailloux also teaches that an auxiliary pixel, Z_1 , replaces an original pixel, E, enhancing the resolution for printing the original image, where he states that the output pixel Z_1 becomes black if the conditions for the original pixels A, B, C, D, F, satisfy a if, else condition in col. 5, lines 14-39.

Referring to **claims 2 and 3**, Mailloux teaches us that magnified "output pixels", Z_1, Z_2, Z_3, Z_4 , replace the original pixels, A, B, C, D, E, wherein Z_1 is read as the *first auxiliary pixel*, which may either be made "white" by the equation, $Z_1=E$, inherently taught as "white", (col. 4, lines 36-38), and (col. 5, 38-39), or Z_1 is made "black" if pixels (A, G) are black and (B, C, D, E, F, H, I) are white, (col. 5, lines 37-39).

With regards to **claims 9, and 13**, please refer to the likes of claim 1. In addition, Mailloux further discloses that the input image may be obtained from an input scanner, or

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personal computer software packages prior to printing (col. 1, lines 35-50), *read as receiving a source image comprising original pixel data.*

With regards to **claim 14**, the digital front end is interpreted by the teachings of Mailloux to be either a scanner or personal computer software packages (col. 1, lines 40-49).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 4, 5, 6, 7, 8, 10, 11, 12, 15, 16, 17** are rejected under 35 U.S.C. 103(a) as being obvious over Mailloux, U.S. Patent Number 5,555,557 as applied to claim 1, 9, and 13, respectively, and further in view of the applicant's cited well-known prior art (hereinafter, Admission).

Referring to **claims 4, 5, 6, 7, and 8**, the Mailloux teaches the method of improving an image such as font with auxiliary pixels replacing a halftone cell including original pixels, A-I. However, Mailloux does not expressly teach that the improved halftone is the following:

- a. Clustered dot type
- b. Dispersed dot type
- c. Clustered cell is a compact dot type.
- d. Clustered cell is a spiral-dot type
- e. Halftone cell is a stochastic

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First, the Admission teaches that a clustered dot type is a well-known method used in prior art for rendering a halftone image from continuous image in the specification, (page 12, lines 5-10). Second, the Admission teaches that a dispersed dot type is a well-known type of a halftone cell used in the image halftone art in the specification, (page 12, lines 5-10). Third, the Admission teaches that the clustered cell type may alternatively be a compact type dot, or a spiral-dot type because it is commonly known in the image halftone art as per the specification, (page 12, line 19). Fourth, the Admission teaches that the halftone cell may alternatively be a stochastic type as is commonly known in the image halftone art as per the specification, (page 12, lines 20-23).

At the time the invention was made, it would have been obvious to one of ordinary skill in the halftone reproduction art to modify Mailloux's teachings of embedding auxiliary pixels in an image to improve the evenness of toner deposition using alternative forms of the halftone cell such as the clustered cell types, or the halftone cell types mentioned above.

One of ordinary skill in the art would have been motivated to do this in order to provide various types of halftone cells, since some cells produce better with xerographic and electrostatically based printer technologies as disclosed by the applicant (page 12, lines 11-13).

With regards to **claims 10 and 15**, please refer to the like teachings of claim 4.

With regards to **claims 11 and 16**, please refer to the like teachings of claim 5.

Regarding **claims 12 and 17**, please refer to the like teachings of claim 8.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Bracco et al. US Patent Number 6,181,438 B1 a method and apparatus for control of lightness/darkness of a digital image rendered by a printing system.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie M Vida whose telephone number is (703) 306-4220.

The examiner can normally be reached on 8:30 am 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on (703) 305-4717. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6743 for regular communications and (703) 308-6743 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

mmv

MMV
March 24, 2003.

KAWilliams

Kimberly A. Williams
Primary Examiner
Technology Center 2600